



# **SOUND REINFORCEMENT** Engineering and Technology

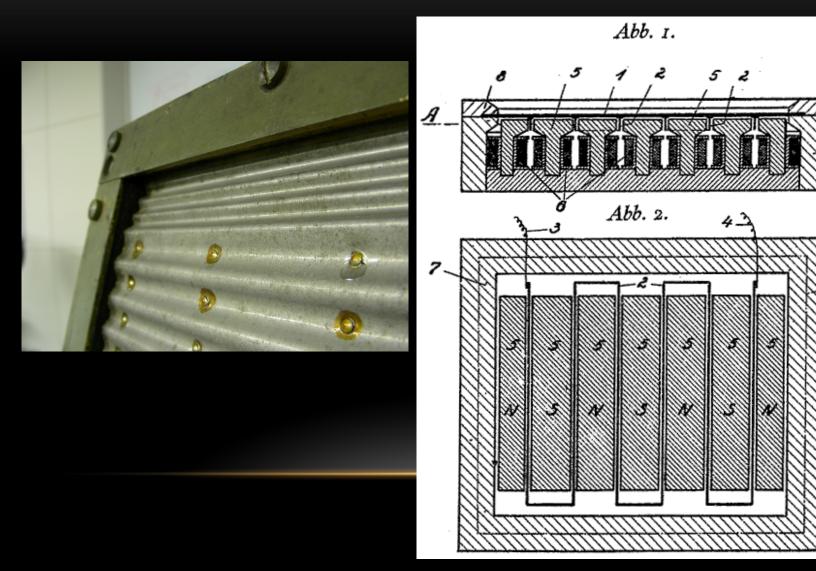
**McGill University** 

Montreal, QC, Canada July 15-17, 2015 AES 59<sup>th</sup> International Conference reflects recent innovations in engineering and technology of Sound Reinforcement. This is the first such AES conference in 25 years and the companies supporting this conference are leaders in their field.

To inspire our innovative outlook, let us look back at one example of innovation in audio engineering from 100 years ago, at the onset of emerging applications in sound reinforcement.



#### BLATTHALLER OF SIEMENS & HALSKE GERMAN PATENT NO. 398,195 FILED 10 MARCH, 1920 AND ISSUED JULY 1924 TO DR. HANS RIEGGER



### **BLATTHALLER SPECIFICATIONS**

- 1.5 mm thick Duralumin-membrane, with waving reinforcement shaped like a "washboard"
- Piston-like diaphragm with copper strip in multiple electromagnets
- Copper strip is riveted with the interposition of insulating materials on an aluminum membrane
- Force is distributed evenly over the membrane's surface
- Motion of the rigid plate is uniform
- Excursions of up to 20 mm, 120 amperes of "voice current"
- Over 100dB with harmomic distortion of 0.1 0.3%
- Giant Blatthaller with capacity of 1000 Watts
- Audible up to 3 kilometers and beyond with favourable wind
- Astonishing efficiency of 25%
- Extremely positive reviews



#### NHK MUSEUM OF BROADCASTING IN TOKYO



### **BLATTHALLER REVIEW 1927**

- "The big speakers filled with their powerful voices well the open space in front of the School and the sound left, in the purity and clarity, of little to be desired".
  - (Swedish Tidskriften Radio, nr 18, 1927)

(From a Demonstration at Stockholm Institute of Technology)

- "Blatthaller" marks the beginning of the real age of largescale public address systems in Germany.
- Used for the first time in 1925 at the official opening of the Deutsches Museum in Munich.
- "Giant-Blatthaller" used since1929, up until 1933, for broadcasting of speeches at numerous events.
- With the largest model ever made, distances of several miles could be covered under the right weather conditions.
- The NHK Museum 100 years old Blatthaller sounds great!

From Martin Schildbach, Siemens AG, 94<sup>th</sup> AES Convention, Berlin, Preprint 3485

The AES 59<sup>th</sup> International Conference in Sound Reinforcement Engineering and Technology is now open.





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